Fall 2018

CE 642-851: Foundation Design

Matthew Riegel

NJIT New Jersey's Science & Technology University

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CE 642 Foundation Design - Fall 2018

Section: 851

Instructor: **Matthew Riegel, P.E.**
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Outside class hours please contact me via Moodle Forum or e-mail.

Text: Foundation Design Principles and Practices 3rd ed; Coduto, Kitch, Yeung, Pearson, 2016. ISBN 0-13-341189-3

Fall 2018: Classes begin Tue 9-4 and ends Tue Dec 18

Week	Date	Topic/*Assignment*
1	Sep. 4	Course Introduction; Uncertainty and Risk in Foundation Design; Soil Mechanics Review. Read – Chapters 1 – 3 Assignment – Relevant examples to be posted under separate cover.
2	Sep. 11	Geotechnical Desk Studies, Subsurface Investigations and Site Characterization. *Quiz No - 1* Read Chapter 4 Assignment – Relevant examples to be posted under separate cover.
3	Sep. 18	Performance Requirements of Foundations *Quiz No – 2* Read Chapter 5 Assignment – Relevant examples to be posted under separate cover.
4	Sep. 25	Bearing Capacity of Shallow Foundations Read Chapters 6 and 7 Assignment – Relevant examples to be posted under separate cover.
5	Oct. 2	Settlement of Shallow Foundations *Quiz No – 3* Read Chapter 8 Assignment – Relevant examples to be posted under separate cover.
6	Oct. 9	Shallow Foundations Geotechnical and Structural Design Read Chapters 9, 10 and 11 Assignment – Relevant examples to be posted under separate cover.
7	Oct. 16	Midterm Exam Lectures 1 - 5
8	Oct. 23	Introduction to Deep Foundations *Quiz No – 4* Read Chapter 12 Assignment – Relevant examples to be posted under separate cover.
9	Oct. 30	Pile Load Transfer, Limit States and Axial Load Testing Read Chapter 13 and 14 Assignment – Relevant examples to be posted under separate cover.
10	Nov. 6	Axial Capacity of Driven Piles – Static Analysis Read Chapter 15 Assignment – Relevant examples to be posted under separate cover.

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Week	Date	Topic/*Assignment*
11	Nov. 13	Axial Capacity of Drilled Shafts – Static Analysis *Quiz No 5* Read Chapter 16 Assignment – Relevant examples to be posted under separate cover.
12	Nov. 20	Thursday Classes Meet
12	Nov. 27	Pile Group Settlement and Structural Design Read Chapters 20 and 21 Assignment – Relevant examples to be posted under separate cover.
13	Dec. 4	Laterally Loaded Piles *Quiz No 6* Read Chapter 22 Assignment – Relevant examples to be posted under separate cover.
14	Dec. 11	Specialty Deep Foundations Read Chapter 17 and 18
15	Dec 18	Final Exam

Attendance and Participation: Given this is an internet based course there are no true attendance requirements. I will maintain "class time" from 7pm to 10pm on the evening that the lectures are uploaded as noted on the schedule shown above. We will use this time to maintain an open forum where I will be available to answer questions and interact real-time. In addition I require that any academic questions be posted on a Moodle Forum associated with that lecture. Please allow 24 hours for me to respond if questions are posted during times other than "class time", after which I suggest you reach out to me via e-mail or cell phone.

We will also use the "class time" to complete any quizzes that I disseminate (a total of 6 are scheduled). I plan to upload a given quiz upon which time you will have 30 to 60 minutes to complete and download your answers, preferably in PDF format. You will need a PDF scanner or a quality digital camera to upload your completed quizzes within the allotted time limit.

The midterm and the final exams will be administered remotely; however, **the final will be administered at NJIT**. Students who reside outside commutable range of NJIT must secure an approved proctored to take their exam. Typically these locations may include a local college, university or library. I will work with you to come to an agreement as to an acceptable location; however, it should be noted these services are sometimes fee based and it is your responsibility to secure a location that meets the academic standards at NJIT to which I agree is acceptable.

Grading:

Your overall grade will be based on the following:

- 15% Quizzes
- 15% Homework Assignments
- 35% Midterm Grade
- 35% Final Grade

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Policy:

All assignments will be collected on the due date prescribed. Late homework will be subjected to a 50% reduction in grade for the week following its due date assignments submitted later than one week beyond the date due will not receive credit. All assignments are to be submitted (uploaded) via Moodle ON OR BEFORE 6:00 PM of the due date.

The Honors Code applies to this course, as it does to every NJIT course. See http://www.njit.edu/academics/honorcode.php

Students will be consulted with and must agree to any modifications or deviations from the syllabus throughout the course of the semester.